



ECN Home	<h2>Constant-Volume Diesel Combustion</h2>
Experimental Data	
Constant-Volume Diesel Combustion	
1 Experimental Data Search	<p>A wide range of ambient (charge-gas) environments can be simulated at the time of fuel injection in this facility, allowing the effect of each variable to be assessed. With full optical access, the following ambient conditions can be generated:</p>
2 Combustion Vessel Geometry	<ul style="list-style-type: none"> Ambient gas temperatures from 450 K to 1300 K
3 Ambient Conditions	<ul style="list-style-type: none"> Ambient gas densities from 3 to 60 kg/m³
4 Thermal & Velocity Distribution	<ul style="list-style-type: none"> Ambient gas oxygen concentrations from 0% to 21%
5 Injector Characterization	<p>These conditions span or exceed those typically experienced in a diesel engine.</p>
6 Fuels	<p>Fuel is injected using common-rail fuel injectors with the following parameter range:</p>
7 Definitions	<ul style="list-style-type: none"> Injection pressures above ambient from 40 to 200 MPa
8 Experimental Diagnostics	<ul style="list-style-type: none"> Nozzle sizes from 0.05 to 0.5 mm
8.1 Soot	<ul style="list-style-type: none"> #2 diesel, single-component reference (n-heptane, cetane), and oxygenated fuels
8.2 Jet Penetration	<p>The data obtained in this facility is useful for model development and validation because of the well-defined boundary conditions and the wide range of conditions employed. (Go to experimental data search).</p>
8.3 Liquid Penetration Length	<p>Links at the left describe the methods for generating these conditions, the diagnostics applied, and the archival data acquired in the facility.</p>
8.4 Lift-Off Length	
8.5 Ignition Delay	
8.6 High-Speed Movies & Flow Visualization	
Related Internet Sites	
References	
Tutorial: Diesel Spray Visualization	
<p>For further information, contact Web Grand Pooh-Bar Last Modified on January 2, 2007</p>	

